Amendments to the Claims:

This listing of claims replaces all prior versions and listings of claims in the application:

Listing of Claims:

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1. (Currently Amended) A method of operating in a CSMA network in which a plurality of peer devices communicate over a medium, comprising:

having a first device, which can be any of the plurality of peer devices, exchange messages with a second device, which can be any other of the plurality of peer devices, over the medium using a CSMA contention-oriented service to establish a session of contention-free intervals within the CSMA contention-oriented service for use by the first device and the second device for contention-free traffic between the devices,

wherein at least some of the other peer devices are made aware of the session of contention-free intervals and refrain from transmitting during the session, and

having the first device determine when transmissions can occur on the medium during the contention-free intervals based on the exchanged messages.

2. (Previously Presented) The method of claim 1, wherein the first device becomes a master device and the second device becomes a slave device for purposes of the established session of contention-free intervals.

3. (Original) The method of claim 2, wherein the contention-free traffic comprises down-stream frames by the master device and up-stream frames by the slave device, and wherein determining comprises:

polling by the master device of the slave device in the down-stream frames and receiving upstream frames from the slave in response thereto.

4. (Previously Presented) The method of claim 1, wherein the first device and the second device each includes a MAC unit coupled to a host, further comprising:

responsive to the connection control messages exchange, receiving a set connection message from the host at the MAC unit, the set connection message including a connection number assigned to a connection between the first device and the second device, a master flag for indicating if the first device is the master device and a control flag for indicating that master control is to be passed and the direction in which the master control is to be passed.

5. (Original) The method of claim 4, wherein each frame in the contention-free traffic includes a contention control indicator for indicating contention free status, a priority field including a priority of the frame, a connection number field for identifying the connection number received in the set connection message, as well as source and destination address fields.

6. (Original) The method of claim 5, wherein each frame includes frame control information observable by substantially all devices in the CSMA network, and wherein the contention control indicator and the priority are included in the frame control information.

7. (Previously Presented) The method of claim 5, wherein the first device becomes a master device and the second device becomes a slave device for purposes of the established session of contention-free intervals, and wherein the contention-free traffic includes a downstream frame from the master device and an upstream frame from the slave device.

8. (Original) The method of claim 7, wherein the downstream frame triggers transmission of an upstream frame from the slave if the connection number matches the connection number in the set connection message, the contention control indicator is set to indicate contention-free status, the priority field is set to a highest priority and the source address matches the address of the master device.

9. (Original) The method of claim 8, further comprising:

preventing transmission of an upstream frame following the downstream frame by setting the connection number to a number other than the assigned connection number.

10. (Original) The method of claim 9, further comprising:

sending another downstream frame following the downstream.

11. (Original) The method of claim 7, wherein the set connection message further includes a source address frame size specifying the size of the frame to be delivered, further comprising:

using a transmit timer based on the source address frame size to determine when a queued frame is to be transmitted when no frame is received by the master device from the slave device due to a failure of an upstream frame or downstream frame.

12. (Original) The method of claim 4, wherein the set connection message further includes a transmit frame size specifying an average frame size, further comprising:

using the transmit frame size to determine the size of a dummy frame to be transmitted when transmission of a frame is to occur and a frame is not queued for transmission.

13. (Previously Presented) The method of claim 4, wherein the first device becomes a slave device and the second device becomes a master device for purposes of the established session of contention-free intervals, and the contention-free traffic includes a downstream frame by the master device and an upstream frame by the slave device, and wherein the set connection message further includes a lifetime timer value for indicating when a queued frame is to be discarded when the downstream frame has not been received from the master device.

14. (Previously Presented) The method of claim 4, wherein the first device becomes a master device for purposes of the established session of contention-free intervals, and wherein the method further comprises passing master control from the master device to the second device when the master flag and the control flag are set.

15. (Previously Presented) The method of claim 4, wherein the second device becomes a master device for purposes of the established session of contention-free intervals, and the method further comprises receiving master control from the master device when the master flag and the control flag are set.

16. (Previously Presented) The method of claim 5, wherein the first device becomes a slave device for purposes of the established session of contention-free intervals and wherein the connection control messages indicate that the slave device is to transmit the last frame in the contention-free interval, and wherein the method further comprises,

responsive to the exchange and triggered to transmit by a downstream frame, transmitting an upstream frame with the contention control indicator having a value for indicating that the contention-free interval is terminated.

17. (Original) The method of claim 1, wherein the medium is a power line.

18. (Original) The method of claim 14, wherein the master device and the second device to whom the master control is passed have different network encryption keys and wherein passing comprises: passing the master control in an unencrypted downstream frame during one of the contention-free intervals.

19. (Previously Presented) The method of claim 1, wherein the first device becomes a master device for purposes of the established session of contention-free intervals, and the method further comprises exchanging messages between the first device and a third device in a different

logical network for arranging to pass control of the session to the third device in the different logical network.

20. (Original) The method of claim 1, wherein frames in the contention-free traffic include frame control information that is heard by other devices and a payload that is not likely to be heard by the other devices.

21. (Original) The method of claim 20, wherein the frame control information includes a channel map index associated with channel map information to be applied to the payload for decoding and demodulation.

22. (Currently Amended) A computer program residing on a computer-readable medium for operating in a CSMA network in which a plurality of peer devices communicate over a medium, the computer program comprising instructions for:

having a first device, which can be any of the plurality of peer devices, exchange messages with a second device, which can be any other of the plurality of peer devices, over the medium using a CSMA contention-oriented service to establish a session of contention-free intervals within the CSMA contention-oriented service for use by the first device and the second device for contention-free traffic between the devices,

wherein at least some of the other peer devices are made aware of the session of contention-free intervals and refrain from transmitting during the session, and

having the first device determine when transmissions can occur on the medium during the contention-free intervals based on the exchanged messages.

23. (Original) The computer program of claim 22, wherein the first device becomes a master device and the second device becomes a slave device for purposes of the established session of contention-free intervals.

24. (Original) The computer program of claim 23, wherein the contention-free traffic comprises down-stream frames by the master device and up-stream frames by the slave device, and wherein determining comprises:

polling by the master device of the slave device in the down-stream frames and receiving upstream frames from the slave in response thereto.

25. (Original) The computer program of claim 22, wherein the first device and the second device each includes a MAC unit coupled to a host, further comprising:

responsive to the connection control messages exchange, receiving a set connection message from the host at the MAC unit, the set connection message including a connection number assigned to a connection between the first device and the second device, a master flag for indicating if the first device is the master device and a control flag for indicating that master control is to be passed and the direction in which the master control is to be passed.

26. (Original) The computer program of claim 25, wherein each frame in the contention-free traffic includes a contention control indicator for indicating contention free status, a priority field including a priority of the frame, a connection number field for identifying the connection number received in the set connection message, as well as source and destination address fields.

27. (Original) The computer program of claim 26, wherein each frame includes frame control information observable by substantially all devices in the CSMA network, and wherein the contention control indicator and the priority are included in the frame control information.

28. (Original) The computer program of claim 26, wherein the first device becomes a master device and the second device becomes a slave device for purposes of the established session of contention-free intervals, and wherein the contention-free traffic includes a downstream frame from the master device and an upstream frame from the slave device.

29. (Original) The computer program of claim 28, wherein the downstream frame triggers transmission of an upstream frame from the slave if the connection number matches the connection number in the set connection message, the contention control indicator is set to indicate contention-free status, the priority field is set to a highest priority and the source address matches the address of the master device.

30. (Original) The computer program of claim 29, further comprising:

preventing transmission of an upstream frame following the downstream frame by setting the connection number to a number other than the assigned connection number.

31. (Original) The computer program of claim 30, further comprising:

sending another downstream frame following the downstream.

32. (Original) The computer program of claim 28, wherein the set connection message further includes a source address frame size specifying the size of the frame to be delivered, further comprising:

using a transmit timer based on the source address frame size to determine when a queued frame is to be transmitted when no frame is received by the master device from the slave device due to a failure of an upstream frame or downstream frame.

33. (Original) The computer program of claim 25, wherein the set connection message further includes a transmit frame size specifying an average frame size, further comprising:

using the transmit frame size to determine the size of a dummy frame to be transmitted when transmission of a frame is to occur and a frame is not queued for transmission.

34. (Original) The computer program of claim 25, wherein the first device becomes a slave device and the second device becomes a master device for purposes of the established session of contention-free intervals, and the contention-free traffic includes a downstream frame

by the master device and an upstream frame by the slave device, and wherein the set connection message further includes a lifetime timer value for indicating when a queued frame is to be discarded when the downstream frame has not been received from the master device.

35. (Original) The computer program of claim 25, wherein the first device becomes a master device for purposes of the established session of contention-free intervals, and wherein the computer program further comprises instructions for passing master control from the master device to the second device when the master flag and the control flag are set.

36. (Original) The computer program of claim 25, wherein the second device becomes a master device for purposes of the established session of contention-free intervals, and the computer program further comprises instructions for receiving master control from the master device when the master flag and the control flag are set.

37. (Original) The computer program of claim 26, wherein the first device becomes a slave device for purposes of the established session of contention-free intervals and wherein the connection control messages indicate that the slave device is to transmit the last frame in the contention-free interval, and wherein the computer program further comprises instructions for, responsive to the exchange and triggered to transmit by a downstream frame, transmitting an upstream frame with the contention control indicator having a value for indicating that the contention-free interval is terminated.

38. (Original) The computer program of claim 22, wherein the medium is a power line.

39. (Original) The computer program of claim 35, wherein the master device and the second device to whom the master control is passed have different network encryption keys and wherein passing comprises: passing the master control in an unencrypted downstream frame during one of the contention-free intervals.

40. (Original) The computer program of claim 22, wherein the first device becomes a master device for purposes of the established session of contention-free intervals, and the computer program further comprises instructions for exchanging messages between the first device and a third device in a different logical network for arranging to pass control of the session to the third device in the different logical network.

41. (Original) The computer program of claim 22, wherein frames in the contention-free traffic include frame control information that is heard by other devices and a payload that is not likely to be heard by the other devices.

42. (Original) The computer program of claim 41, wherein the frame control information includes a channel map index associated with channel map information to be applied to the payload for decoding and demodulation.

43. (Original) The method of claim 1 wherein the plurality of devices represent less than all of the devices communicating over the medium.

44. (Original) The computer program of claim 22 wherein the plurality of devices represent less than all of the devices communicating over the medium.